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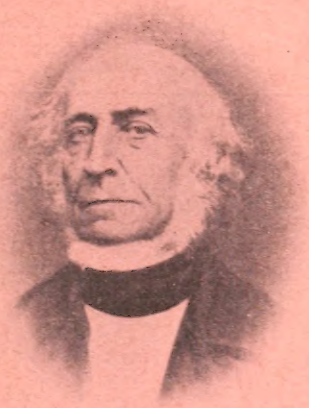

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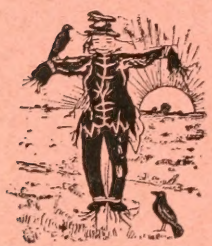

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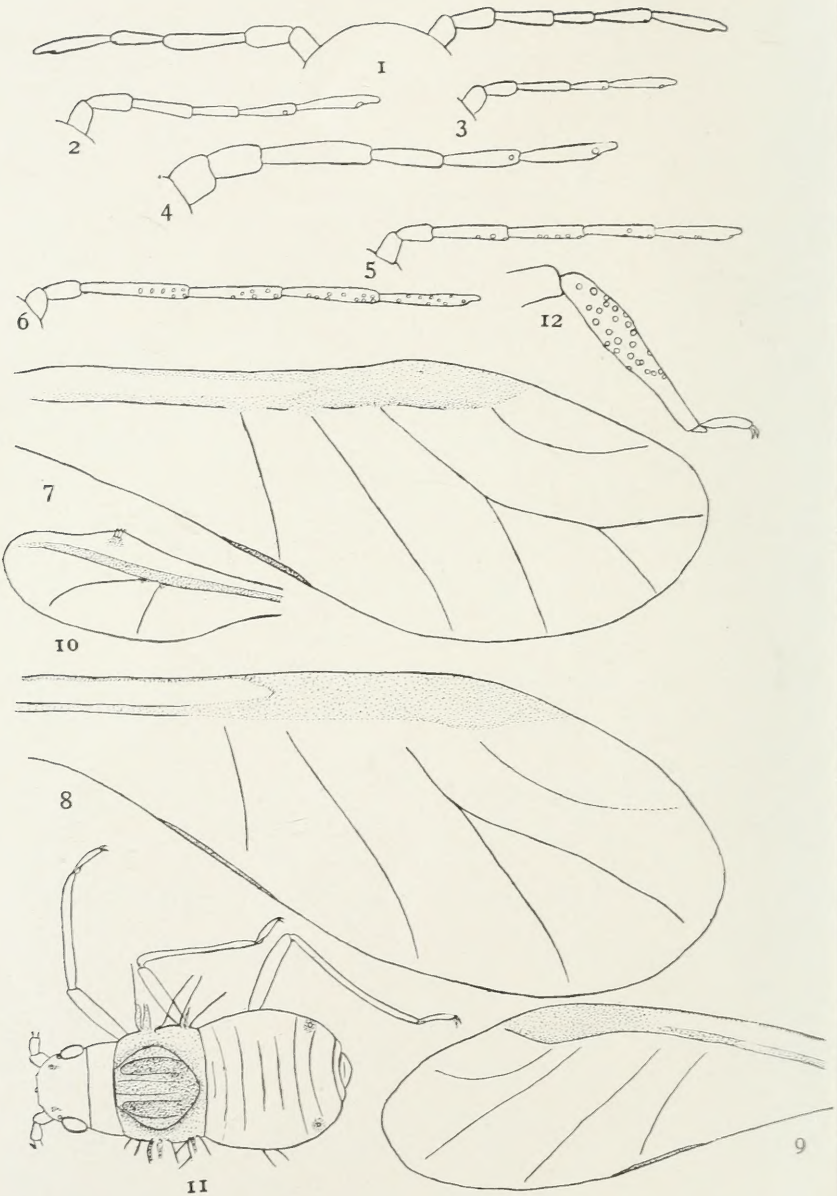

WOOLLY APHIS OF OAK—DAVIS.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXII. JUNE, 1911. No. 6.

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The Woolly Aphis of Oak (Phyllaphis? querci Fitch) (Hemip.).

BY JOHN J. DAVIS. *

(Plate VII)

A woolly aphis, which is possibly the species described by Fitch as *Eriosoma querci,* has been collected by us on oak foliage from various localities in Illinois, definite collections having been made at Chicago, Joliet, Aurora, Rockford, Peoria and Danville. I have also received this species from Mr. W. P. Flint, who collected it on oak at Normal, Illinois.

Doctor Fitch described this species in his Fifth Report † as follows:—

"Oak Blight, *Eriosoma querci,* new species.

"A species of blight, or a woolly aphis upon oak limbs, puncturing them and exhausting them of their sap, was met with in northern Illinois ,but I have never seen it in New York. It is very like a similar insect upon the basswood. The winged individuals are black throughout, and slightly dusted over with an ash-gray powder resembling mold. The fore wings are clear and glassy, with the stigma-

*Formerly of the office of the State Entomologist, Urbana, Illinois; *now* at the Experiment Station Building, Lafayette, Indiana.

†Fifth Report of the State Entomologist of New York. Ann. Rep. N. Y. State Agr. Soc. f. 1858 (1859), p. 804.

spot dusky and feebly transparent, their rib-vein black, and their third oblique vein abortive nearly or quite to the fork. It is 0.16 long to the tip of its wings. I find no woolly aphis mentioned by European authors as infesting the oak, except the *Eriosoma quercus* of Sir Oswald Mosley (Gardener's Chronicle, i. 828), which, in the List of Homopterous Insects of the British Museum, p. 1083, is supposed to be the *Coccus lanatus* of Geoffroy, and would hence appear to be a very different insect from the one now described."

Walsh‡ next lists the species from the United States, and Thomas* some years later quotes, in part the description as given by Fitch, and placing it in the genus *Schizoneura,* in which genus it has been placed by all writers since. In his list of Minnesota Aphididae† Oestlund states that he found apterous forms of what he supposes to be this species in Minnesota, and the next year (1887) ‡‡ he again reports with some doubt, this species, quoting from the original description. Packard lists the species§ among the forest insects, quoting from Thomas. Cowen** questionably determines as this species, immature wingless forms collected in Colorado, "August 19, in woolly patches on young shoots of *Quercus undulata,*" and briefly describes them. Clarke†† next lists the species from California, giving no descriptive notes other than color, which is said to be black. Davidson‡‡ reports it as abundant in California on live oak (*Quercus agrifolia*). In a letter dated No-

‡ On the Genera of Aphididae found in the United States. Proc. Ent. Soc. Phila., Vol. 1 (1862), p. 303.

*Eighth Report of the State Entomologist of Illinois. Trans. Dept. Agr. Ill., Vol. XVI (1880), p. 139.

† List of the Aphididae of Minnesota. Fourteenth Ann. Rep. Geol. and Nat. Hist. Surv. Minn., 1886, p. 55.

‡‡ Synopsis of the Aphididae of Minnesota. Bull. Geol. and Nat. Hist. Surv. Minn., No. 4 (1887), p. 29.

§ Insects injurious to forest and shade trees. Fifth Rept. U. S. Ent. Com. 1890, p. 212.

**A preliminary list of the Hemiptera of Colorado. Bull. Colo. Agr. Exper. Station, No. 31, Tech. Ser. No. 1 (1895), pp. 116-117.

††A list of California Aphididae. Can. Ent., Vol. XXXV (Sept., 1903), p. 248.

‡‡ Further notes on the Aphididae collected in the vicinity of Stanford University. Journ. Econ. Ent., Vol. III (Aug., 1910), p. 374.

vember 15, 1910, Mr. Davidson writes: "I found *Schizoneura querci* Fitch in flocculent masses on the under side of the leaves and also on the twigs of live oaks (*Q. agrifolia* and *Q. wizlensii*). I have taken a few winged specimens, and the venation is that of *Schizoneura.*" The present writer listed§ this species from Illinois, upon Fitch's authority and refers to a *Phyllaphis* collected in Illinois on oak leaves which he considers probably distinct from *querci* of Fitch.

It is with considerable doubt that I place the species found in Illinois the past few years as identical with the species described by Fitch as *querci.* The species which we have found and describe later in this paper lives on the upper- and undersurfaces of the leaves in small colonies, which are completely covered with a rather dense flocculence. During the summer only wingless viviparous females were found, while winged males and oviparous females were collected in October. In one instance a wingless male was taken. The species is quite variable, but evidently does not belong to the genus *Schizoneura.* Neither does it fully agree with the genus *Phyllaphis,* although it is more nearly related to this than it is to *Schizoneura.* From the unusually loose description given by Fitch, it is impossible to positively recognize the species. The principal characters of *querci* as given by Fitch are its habitat and color, the former agreeing quite well with the species before us, but the color being quite different, our species being pale greenish in the viviparous to pale brownish in the oviparous forms. Ashmead* described a black aphid on oak which he called *Phyllaphis niger,* which agrees more nearly with the species characterized by Fitch as *querci.* Full descriptions are herewith given, hoping that they will be an aid to future investigations. As the writer has above indicated, he is of the opinion that Fitch's species is possibly different from the one here described, but that this one is the same as the species considered as *querci* Fitch by Oestlund, Cowen and Davidson.

§ A list of the Aphididae of Illinois, with notes on some of the species. Journ. Econ. Ent., Vol. III (Oct., 1910), p. 413.

*On the Aphididae of Florida, with descriptions of new species. Can. Ent., Vol. XIII (1881), p. 155.

Wingless viviparous female.—Head and thorax usually yellow or yellowish brown, the fore part of the head being pale dusky. Abdomen, after removal of the white flocculence, usually pale green, but sometimes pale yellow or yellowish green, and usually darkest on the sides. Eyes blackish. Beak not reaching, or barely reaching, the coxæ of second pair of legs. Antennæ very pale greenish or yellowish, excepting distal ends of IV and all of V and VI, which are dusky to blackish; rather short, being a third or less the length of the body; segments vary in length as will be noticed from the accompanying figures; usually 6-segmented, but often only 5; as a rule III and VI subequal, II and IV sub-equal, V longer than IV but shorter than VI; sensoria only at distal ends of V and VI. (Fig. 1 drawn from specimens collected in Chicago, October 22, 1908, show two antennae from the same specimen, one being 5- and the other 6-segmented; figs. 2 and 3 were drawn from different individuals, but both from same colony collected in Chicago September 15, 1908; fig. 4 drawn from specimen collected by Mr. W. P. Flint at Normal, April 9, 1908). Legs pale greenish excepting distal half of tarsi, which are black. Abdomen with six longitudinal rows of wax glands, three on each side of the median line, one of these being on the lateral edge. Cornicles very slightly elevated above the surface, but quite distinct, being represented by dusky to blackish rings. Style sub-obsolete.

Wingless male.—A single specimen was collected at Chicago, September 15, 1908, and no color notes were taken. The size and general appearance of the body much resembles that of the winged male described below. Antennæ barely reaching to cornicles; the last four segments sub-equal, V being invariably shorter than II or IV, and VI invariably longer than III or IV; segment III with 3-4 circular sensoria in a row, IV with 3-5, V with 2-4 in addition to the usual one at distal end, and VI with 2-4 and the usual one at end of basal portion. (Pl. VII, fig. 5).

Winged male.—Head and thoracic shield dusky brownish to blackish, neck yellowish, abdomen pale greenish to yellowish. One specimen had indistinct irregular dusky markings. (Pl. VII, fig. 11). In colonies beneath a heavy flocculence, and individuals covered with a fine pulverulence. Beak reaching a little beyond coxæ of first pair of legs but not to coxæ of second pair. Eyes dark red to black. Antennæ dusky, paler at base; reaching about to cornicles; last four segments about sub-equal; III with 3-8 circular sensoria; IV with 4-7, V with 6-11, and VI with 5-10. (Pl. VII, fig. 6). Legs pale excepting joints and the tarsi, which are dusky. Wing veins blackish. Venation variable, as follows: Of the five specimens before me, two individuals have the discoidal of both wings twice branched (Pl. VII,

fig. 7); another specimen has one wing with discoidal twice branched and in the other wing it is only once branched (Pl. VII, fig. 8); one specimen has a once-branched discoidal in one wing and a partial second branching in the other wing; the last individual has both discoidals only once-branched. Summing up, there are five twice-branched discoidals, one with partial second branch, and four only once-branched. Mr. J. T. Monell very kindly loaned me a slide bearing two winged males of this species. Two of the wings have discoidal twice branched, another no branching (Pl. VII, fig. 9), and the fourth wing is missing. The specimens from Monell's collection were collected by Mr. Theo. Pergande on *Quercus alba* and *Q. prinus*, Washington, D. C., October 24, 1882. Cornicles very slightly elevated above surface abdomen, dusky, with blackish line indicating the opening. Described from five individuals collected at Chicago, October 22, 1908, and at Danville, Ill., October 8, 1910.

Measurements.—Average: Length of body, 1.01 mm.; width, 0.43 mm.; length of wings, 1.42 mm.; width, 0.54 mm.; antennae III, 0.20; IV, 0.20; V, 0.18; VI, 0.19; average total, including segments I and II 0.88 mm.

Wingless oviparous female.—Entire body covered with a rather heavy pulverulence, beneath which the body color is greenish to pale brownish, more often the latter, especially late in the season. Head dusky. Prothoracic segment with two dusky spots near the anterior and two near the posterior margin. Body with two longitudinal rows of dots close together on each side of the dorsal median line and a single row on each side at the margin. Eyes dark red. Beak not quite, or barely, reaching the coxæ of the second pair of legs. Antennæ dusky, more uniform than in the viviparous female, and are, as a rule, of a type shown in fig. 4. Legs short and dusky, hind tibiæ with many circular sensoria on the basal two-thirds. (Pl. VII, fig. 12), Cornicles indicated by dark circular rings. In size and other respects it has the appearance of the viviparous female.

Explanation of Plate VII.

Phyllaphis (*?*) *querci* Fitch.—Figs. 1, 2, 3 and 4, antennæ of wingless viviparous female; 5, antenna of wingless male; 6, antenna of winged male; 7, 8 and 9, fore wing of winged male; 10, hind wing of winged male; 11, winged male; 12, hind tibia of wingless oviparous female.

Camera lucida drawings, figs. 1, 2, 3, 4, 5, 6, 7, 8 and 12, with a one-inch eyepiece and two-thirds objective; 9, 10 and 11, with a two-inch eyepiece and two-thirds objective. In other words, 9, 10 and 11 are drawn to three-fifths the size of the others.

A New Species of Gerris (Hemip.).

By the late G. W. KIRKALDY, F. E. S.*

Gerris buenoi n. sp.

Belongs to sub-genus *Gerris*. Middle tarsi moderately slender with the first segment three times as long as the second; hind tibiæ and tarsi together scarcely as long as their femur.

Sternites in the male flattened, not carinate, the seventh doubly emarginate at the apical margin, the middle (2d) emargination broad and somewhat roundedly angular; not produced into a spine at the angles of the sternite; eighth sternite in the female transverse. Metasternal tubercle small, black; pronotum not suffused on the disc with reddish or yellowish but with the fore lobe with a marginal flavescent line. Length, males, macropterous form, 7 to 7½ mm.; apterous form, 7 mm. Length, females, macropterous form, 7½ to 8 mm.; apterous form, 7¾ mm.

[Note by J. R. T. B.—This species is a very near neighbor of *Gerris marginatus* Say, with which it has often been confounded in collections. Aside from the correlated structural characters, however, the flavescent margin of the anterior lobe of the pronotum serves to distinguish it at once. It can also be separated by its smaller size, pronounced sutures between the abdominal segments, and more or less flattened abdomen in the male.

My good friend, Mr. E. P. Van Duzee sent me specimens of this species labelled "*Gerris sulcatus* Uhler," but neither he, Kirkaldy, nor myself have succeeded in finding a description by this author anywhere, hence Kirkaldy concluded that it was merely a manuscript name and decided to describe it, naming it after me. The last I much deprecate, since my views are decidedly against the practice of giving to insects some form of the name borne by an individual.

The species is widely distributed and ranges from British Columbia to the Atlantic States.]

*This is one of several fragments left by my lamented friend. It is, as may be seen, a rough preliminary diagnosis, which I have gone over, but it is distinctly not to be regarded or considered as in any way my work, as my share in it has been that of a transcriber only.—J. R. T. B.

Notes on Paraguayan Orthoptera, with Descriptions of a new Genus and Four new Species.

By James A. G. Rehn, Academy of Natural Sciences, Philadelphia, Pa.

The following notes and descriptions are based on a small but very interesting collection of Orthoptera submitted to me for study by the well-known naturalists, A. de Winkelried Bertoni and Prof. C. Schrottky, of Puerto Bertoni, Paraguay, from which locality the greater portion of the material was secured. Prof. Bruner has already reported* on a collection of Acridoidea from this locality.

FORFICULIDAE.

Pyragra brasiliensis (Gray).

Puerto Bertoni.—One female (Schrottky).

Pyragra paraguayensis Borelli.

Paraguay.—One male (Schrottky). This specimen is slightly smaller than the original measurements of the species, but otherwise it is typical.

Demogorgon batesi Kirby.

Puerto Bertoni.—One male (Schrottky).

BLATTIDAE.

Pseudomops sp.

Puerto Bertoni.—November. One broken specimen. (Bertoni, No. 715).

Ischnoptera bilunata Saussure.

Asuncion.—1900. Two males. This species was described from Chiquitos, Bolivia.

Nyctibora sericea Burmeister.

Puerto Bertoni.—October, 1904. (Bertoni, No. 413).

Panchlora thalassina Saussure and Zehntner.

Puerto Bertoni.—December, 1909. Two females. (Bertoni, No. 401).

*Ent News, XXI, pp. 301-307.

Caudell has recorded this from Sapucay, Paraguay, while Giglio-Tos reported it from Tala and San Lorenzo, Argentina.

Tribonium spectrum (Eschscholtz).

Puerto Bertoni.—October, 1909. One female. (Bertoni, No. 402).

This species has been recorded from Brazil (numerous authors), and Caiza, Bolivian Chaco (Giglio-Tos), while a record of a larva of an undetermined species of this genus from Villa Rica, Paraguay (Giglio-Tos) may refer to this species.

Monastria biguttata (Thunberg).

Yaguarasapa.—1892. One male. (Bertoni, No. 479).

Blaberus minor Saussure.

Paraguay.—1904. One female. (Bertoni, No. 412). Giglio-Tos has recorded this species from San Lorenzo, Argentina and Aguairenda, Bolivian Chaco and numerous authors have credited it to Brazil.

Blaberus sp.

Yaguarasapa.—1892. One female. (Bertoni, No. 475).

This species is probably new and related to *B. rufescens* on one hand and the *postica* group on the other. It seems inadvisable to make a definite determination of this specimen until more material belonging to this extremely variable genus is in hand.

Blaberus sp.

Puerto Bertoni.—1905. One nymph. (Bertoni, No. 743.)

Hormetica atlas n. sp.

Type.— ♂ ;Puerto Bertoni, Paraguay.—1905. (Bertoni, No. 420). [A. N. S. P. type, No. 5174.]

Allied to *H. laevigata* Burmeister, but differing in the more elongate pronotum and tegmina, the blackish coloration of the "horse-shoe" on the pronotum and in the non-annulate antennæ.

Size, large ; form moderately depressed; surface of pronotum rugulose; of abdomen tuberculate. Head completely hidden under the pronotum; interspace between the eyes very great and equal to that between the antennal bases; face considerably flattened. Pronotum

with the lateral and cephalic margins strongly arcuate and slightly produced cephalad. The margin proper cingulate and strongly elevated and sub-lamellate cephalad; caudal margin arcuato-truncate, rather narrowly rounding laterad in the lateral margins, surface with an elevated swollen horseshoe-shaped design, the "heels" directed cephalad and thicker and more elevated than the other portions of the pattern, having at their internal angle a blunt tubercle; area within the "horseshoe" biundulate and with seven low more or less parallel ridges, cephalad of which are several low diverging subarcuate folds, of which the distal is subtuberculate, while immediately cephalad of the elevated "heel" of the pattern is a low but acute tubercle; lateral portions of the pronotum distinctly deflected. Tegmina slightly exceeding the length of the pronotum, subovate, width nearly three-fourths of the length, coriaceous; costal margin hardly arcuate proximad, strongly arcuate distad, apex well rounded, sutural margin straight; anal sulcus reaching slightly distad of the middle of the sutural margin. Wings falling but little short of the tegmina. Abdomen with the greatest width slightly exceeding the tegminal length, dorsum distinctly but finely tuberculate mesad; supra-anal plate damaged; cerci short, depressed, sub-fusiform; sub-genital plate distinctly emarginato-sinuate on the right side, styles lateral and extremely short.

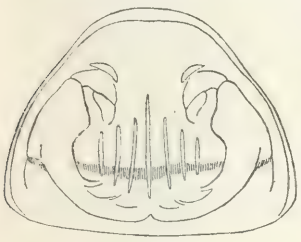


Fig. 1.—*Hormetica atlas* n. sp. Dorsal outline of pronotum of type showing general form of the elevated "horse-shoe" pattern.

General color tawny, darker and more rufescent on the head, pronotum, tegmina and limbs; pronotal pattern seal brown, the enclosed area dark chocolate; antennæ with the proximal joint of the color of the head, followed by seal brown fading into fawn color distad; eyes of the general color; base of the tegminal vein trunk blackish; dorsal abdominal segments with the median section of their distal halves darker than the other portion of the segments; tibial spines blackish.

MEASUREMENTS.

	♂ Type.	♀ Paratype.
Length of body	45.5 mm.	35.5 mm.
Length of pronotum	15.5 mm.	11. mm.
Greatest width of pronotum	19.5 mm.	14.5 mm.
Length of tegmen	18.5 mm.	12.8 mm.
Greatest width of tegmen	14.2 mm.	10. mm.
Greatest width of abdomen	20.5 mm.	16.2 mm.

A paratypic female (Bertoni, No. 704) has also been examined, the measurements for it being given above. It differs from the type in the characters usual in that sex of species of this genus, viz.: The smaller size, the great suppression of the pronotal "horseshoe" pattern and the absence of the marked lamellato-elevate character of the cephalic pronotal margin. The supra-anal plate is perfect in this specimen and transverse arcuate in form with the faintest possible median emargination.

Dasyposoma nigra Brunner.

Puerto Bertoni.—1905. One female. (Bertoni, No. 421).

This specimen is somewhat smaller than Brunner's measurements (type from Brazil), but otherwise the Puerto Bertoni individual does not appear separable.

MANTIDAE.

Acanthops sinuata (Stoll).

Puerto Bertoni.—One male. (Schrottky, No. 3).

Puerto Bertoni.—1909. One male. (Bertoni, No. 398).

This species has been recorded from Sapucay, Paraguay, and Paraguay without further locality.

ACRIDIDAE.

Apotettix bruneri Hancock.

Puerto Bertoni.—One female. (Schrottky).

This is the first record of the species with exact locality.

Sisantum gracilicornis (Bruner).

1910.—*Orphula gracilicornis* Bruner, ENT. NEWS, XXI, p. 301, [Puerto Bertoni, Paraguay.]

Puerto Bertoni.—One female. January 18, 1910. (Schrottky, No. 2).

Puerto Bertoni.—One female. No date. (Schrottky).

When compared with a paratype of *Sisantum notochloris*, the type of the genus *Sisantum*, and specimens of *Orphula pagana*, the type of the genus *Orphula*, we cannot agree with the original author in his generic assignment of this species. While it is true that the apex of the tegmina is narrowly oblique truncate, it is by no means the obliquely truncate apex of *O. pagana*,

while the apex of the same in *Sisantum notochloris* is not decidedly rounded, much approaching that seen in *gracilicornis*. Again the caudal femora and fastigio-facial angle are far nearer the type found in *notochloris* than in *O. pagana*, the quite elongate, little inflated femora found in *pagana* being quite different from the more robust, distinctly inflated character of these parts in *Sisantum notochloris* and *gracilicornis*.

The two specimens in hand are slightly larger than the measurements of the female sex given by Bruner.

Orphulella punctata (DeGeer).

Puerto Bertoni.—One female. (Schrottky).

This individual belongs to the form *elegans*.

Ommexecha virens Serville.

Puerto Bertoni.—One female. December 13, 1909. (Bertoni, No. 394 part).

Puerto Bertoni.—One female. No date. (Schrottky).

One of these specimens is suffused with ferruginous, while the other has a "salt and pepper" effect of gray on brownish. In response to a query regarding the color variation of individuals of this and other species of the genus, Senor Bertoni writes that "the *Ommexechae* live in communities, are very variable in color and the green and obscure individuals are encountered in copula."

Tropinotus discoideus Serville.

Puerto Bertoni.—Three males, two females. (Schrottky). Two of the males have green on the dorsum as previously described by Rehn.*

Chromacris Stolli (Pictet and Saussure).

Puerto Bertoni.—January, 1910. One male, one female. (Schrottky, No. 1).

Adimantus vitticeps (Blanchard).

Puerto Bertoni.—One female. (Schrottky, No. 6).

The following notes on the nymphal condition of this specimen have been supplied by the collector.

*Proc. Acad. Nat. Sci. Phila., 1907, p. 170.

No. 6. Nymph ♀ (the same individual I sent you after its transformation.) Food-plant: Sugar cane. January. Not common. Head above yellow with two green stripes with a black center, behind the eyes a large green spot. Face green with black shades, mouthparts whitish, palpi with black points at apex. Pronotum yellowish green; on each side two longitudinal stripes composed of blackish green specks; mesopleuræ yellow with three blackish green transverse stripes; wings clear green. Abdomen above yellowish green, each segment on both sides with two longitudinal stripes of dark green color, so that four stripes, more or less complete, run over the dorsum of abdomen, the last segment yellow with black cerci. Legs greenish and with black spots in regular intervals; femora III yellowish, the outer side with a dark green longitudinal stripe; tibiæ and tarsi III spotted with black. Sternum yellowish with a black margin and a red patch. Venter greenish, each sternite with lateral triangular black spots.

TETTIGONIIDAE.

Isophya melanochloris n. sp.

Type.— ♂ ; Puerto Bertoni, Paraguay.—November 2, 1909. (Bertoni, No. 397). [A. N. S. P. type, No. 5175.]

A very distinct species of the genus with bidentate cerci, sharply pointed processes to the subgenital plate and a most striking livery of green and black.

Size somewhat large (for the genus). Head short, occiput roundly declivent to the fastigium, very slightly inflated; fastigium about half again as broad as the proximal antennal joint, sub-quadrate, sulcate mesad, distal margin broadly in contact with the broad truncate facial fastigium; eyes small, rather tumescent, ovate in outline; antennæ exceeding the body in length. Pronotum deplanate dorsad, the disc slightly expanding caudad, the caudal width contained about one and one-quarter times in the length, cephalic margin of disc sub-truncate, caudal margin arcuato-subtruncate, caudal section with a very short but decided medio-longitudinal carina; lateral angles of disc rounded cephalad, decided caudad; lateral lobes about one and one-third times as long as deep, ventro-cephalic angle sub-rectangulate, ventro-caudal angle and caudal margin regularly arcuate, humeral sinus hardly indicated. Tegmina very slightly shorter than the dorsal length of the pronotum, apex at the extremity of the principal veins and rounded, sutural margin regularly arcuate to the apex, costal margin sub-arcuate; tympanum covering al-

Fig. 2.—*Isophya melanochloris* n. sp. Dorsal view of apex of abdomen of type (x 5).

most the entire tegmen, transverse vein moderately robust. Abdomen inflated; terminal dorsal abdominal segment semi-elliptically depressed, medio-longitudinally sulcate, distal margin slightly obtuse-angulate; cerci straight, rather robust, apex bluntly pointed, internal face with a pre-apical and a median tooth, of which the former is slightly recurved and distally spiniform; sub-genital plate* with a pair of slightly divergent styliform processes, between which the margin is sub-truncate. Cephalic, median and caudal femora unarmed on ventral surface and without genicular spines; cephalic tibiæ with the tympanum open, all four margins of median and distal sections of tibiæ armed with spines; median tibiæ with the margins spined; caudal tibiæ very slightly longer than the femora; all tarsi without arolia between the claws.

General color apple green laterad, becoming olive green on the sides of the head and face and bistre on the dorsum of head and pronotum. Dorsum of abdomen with a moderately broad medio-longitudinal stripe of velvety black, reaching to the terminal abdominal segment. Tegmina with the costal field blackish narrowly edged with ferruginous, the area of the principal veins slightly ferruginous, discoidal field oil green, tympanum varied with rufous, seal brown and pale greenish. Antennæ black, more or less ferruginous proximad; eyes chestnut. Limbs burnt umber, more or less lined and washed with seal brown; caudal femora with a broad lateral area of seal brown, proximal extremity of the same apple green; caudal tibiæ largely seal brown.

MEASUREMENTS.

Length of body	22. mm.
Length of pronotum	4.5 mm.
Greatest dorsal width of pronotum	3.8 mm.
Length of tegmen	5.5 mm.
Width of tympanum of tegmen	3.8 mm.
Length of caudal femur	20.5 mm.

The type of this species is unique.

Scaphura nigra (Thunberg).

Puerto Bertoni.—November, 1909. One immature male, one immature female. (Bertoni).

Gymnocera fasciata (Brunner).

Puerto Bertoni.—October, 1904. One female. (Bertoni, No. 411).

There is some uncertainty regarding the determination of

*This is considerably mutilated in the type, but its structure is evident.

this specimen, as it has lost a good portion of the original coloration.

Phylloptera alliedea Caudell.

Puerto Bertoni.—October, 1907. One male. (Bertoni, No. 405).

Theudoria nigrolineata Brunner.

Puerto Bertoni.—One female. (Bertoni).

This species was described from Buenos Ayres, this being the next record for the species.

Theudoria melanocnemus (Stal).

Puerto Bertoni.—November, 1907. One female. (Bertoni, No. 414).

The previous records of this form were from Buenos Ayres (type) and Montevideo.

Dasyscelis normalis Brunner.

Puerto Bertoni.—November, 1905. One female. (Bertoni, No. 418).

Lichenochrus hilaris Brunner.

Puerto Bertoni.—November, 1905. One female. (Bertoni, No. 417).

This species was previously known only from Matto Grosso, Brazil.

Lichenochrus sp.

Puerto Bertoni.—November, 1909. One immature female. (Bertoni, No. 407).

Paroxyprora tenuicauda Karny.

Puerto Bertoni.—One male. (Schrottky).

Puerto Bertoni.—1905. One female. (Bertoni, No. 705).

This species was recently described from Rio Grande do Sul, Brazil, and there is some little uncertainty regarding the determination of the specimens in hand.

Xiphilimum amplipenne Caudell.

Puerto Bertoni.—January, 1910. One female. (Bertoni, No. 408).

This species was previously known only from Sapucay, Paraguay.

BERTONIELLA n. gen.

A member of the Agraeciini allied to *Lobaspis* Redtenbacher, from which it differs in having the tegmina and wings no longer than the body, in having the genicular lobes of the cephalic femora and cephalic one of the median limbs non-spinose, and in the decidedly abbreviate limbs in the male. From *Gonatacanthus* Karny it can be immediately separated by the non-spinose cephalic genicular lobes, from *Anthracites* Redtenbacher by the longer tegmina and shorter limbs, from *Paralobaspis* Giglio-Tos by the absence of the peculiar fastigial development of that genus, from *Nannagroecia* by the arcuate ovipositor and from *Alphopteryx* Redtenbacher by the different tegmina.

Fastigium spiniform, contiguous ventrad with facial fastigium, antennæ greatly exceeding length of body; eyes subglobose. Pronotum in male produced caudad over tegminal tympanum; humeral sinus hardly indicated. Tegmina subcoriaceous, no longer than body, apex rounded. Prosternum long bispinose. Supra-anal segment of male sub-angulate, fissate; cerci of male short, strongly incurved, apically toothed; sub-genital plate of male with paired styliform appendages surmounted by true styles. Ovipositor falcate, acute, margins entire. Limbs short and robust; genicular lobes of cephalic femora and cephalic lobe of median femora rounded, non-spinose, caudal lobe of median femora spinose, genicular lobes of caudal femora spinose; ventro-lateral margin of caudal femora spined, ventro-cephalic margins of cephalic and median femora each with several spines.

Type.—B. agraecioides n. sp.

We take pleasure in dedicating this most interesting genus to Senor A. de Winkelried Bertoni, who collected the type and who has done so much to make known to science the rich fauna of Paraguay.

Bertoniella agraecioides n. sp.

Type.—♂; Puerto Bertoni, Paraguay.—November, 1909. (A. de Winkelried Bertoni.) [A. N. S. P., type No. 5176.]

Size, rather small; form, robust. Head broad, occiput nearly horizontal; fastigium narrow, spiniform, apex rounded, not extending cephalad of the proximal antennal joint; eyes globose, but little prominent; antennæ with proximal joint swollen on internal face. Pronotum with greater dorsal width contained more than twice in length of same, caudal section of disk produced caudad in an arcuate extension covering almost the entire tympanal field of tegmina; cephalic margin of disk truncate; lateral lobes with their greatest depth contained over

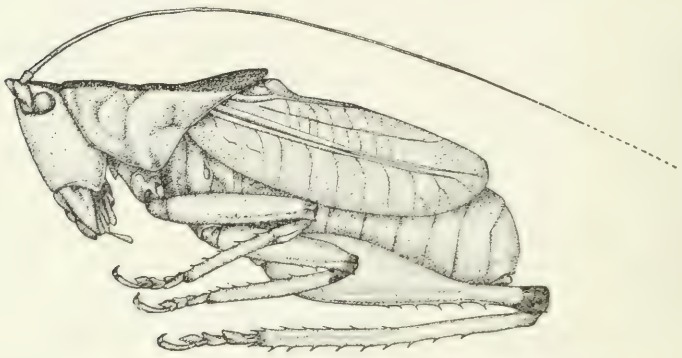


Fig. 3.—*Bertoniella agraecioides* n. gen., n. sp. Lateral view of male type (x 3).

one and one-half times in greatest length; ventral margin oblique truncate, ventro-caudal angle obtuse-angulate, caudal margin oblique truncate, humeral sinus hardly appreciable. Tegmina sublanceolate, about reaching base of supra-anal segment, costal margin arcuate distad, apex rounded, structure coriaceous, subreticulate. Wings distinctly but not greatly shorter than tegmina. Supra-anal segment (terminal dorsal abdominal segment) very narrowly fissate for about one-third of its length, margin very obtuse-angulate; cerci with lateral face of proximal portion decidedly and roundly excavate; subgenital plate with styliform appendages fairly robust, parallel, separated by about the width of one appendage, true styles short. Cephalic femora about two-thirds as long as the pronotal disk, armed with three spines distad on the ventro-cephalic margin, ventro-caudal margin unarmed; median femora slightly shorter than cephalic pair, similarly armed; cephalic tibiæ with tympanum cleft-shaped, cephalic and median tibiæ unarmed dorsad, armed on both margins ventrad; caudal femora about as long

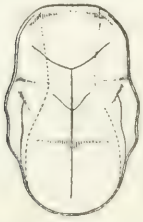


Fig. 4.—*Bertoniella agraecioides* n. gen., n. sp. Dorsal outline of pronotum of male type (x 3).

as the tegmina, decidedly inflated in the proximal two-thirds, distal portion narrow, lateral margin with five to six distal spines, internal margin with one or two distal spines; caudal tibiæ subequal to the femora in length, very slightly bowed.

General color ochraceous, the limbs approaching tawny ochraceous; dorsum of head and entire dorsum of pronotum brownish black, this narrowing cephalad and extending over the dorsal surface of the fastigium; genicular regions of the femora and tibiæ, a spot at the distal extremity of tympanal slit and less clearly defined areas at the tips of the tibiæ brownish black; eyes chestnut; antennal scrobes brownish black; tegmina with the anal field strongly suffused with dark brownish, costal and discoidal fields with a few scattered irregular spots of brownish black.

MEASUREMENTS.

	Type ♂	♀
Length of body	22.5 mm.	26.5 mm.
Length of pronotum	9.2 mm.	8.5 mm.
Greatest (caudal) dorsal width of pronotum	4.2 mm.	4. mm.
Length of tegmen	13.5 mm.	16. mm.
Length of caudal femur	13. mm.	16.2 mm.
Length of ovipositor		13. mm.

A female of this species taken by Schrottky at the type locality (without recorded date) gives the measurements entered in the above table with those of the type. The characters of disagreement with the male description are here given.

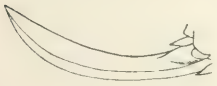


Fig. 5.—*Bertoniella agraecioides* n. gen., n. sp. Outline of ovipositor of female type (x 2).

Pronotum with caudal development of disk much less than in male, although of similar shape; caudal margin of lateral lobes slightly sigmoid, the humeral sinus hardly marked. Ovipositor nearly equal to caudal femora in length, rather broad, falcate; subgenital plate small, produced trigonal; apex rather broadly fissate. Color as in male, ovipositor of general color.

Lutosa* paranensis n. sp.

Type.—♂; Puerto Bertoni, Paraguay.—October, 1909. (Bertoni, No. 410). [A. N. S. P., type No. 5177.]

Allied to *L. brasiliensis* (Brunner), from Santa Catharina, Brazil, from which it differs in the hardly curved caudal tibiæ and considerably smaller size.

**Pherterus* of authors.

Size medium; form robust, moderately compressed; surface polished. Head with the occiput roundly declivent to the subvertical fastigium, which is slightly broader than the proximal antennal joint; margin bluntly acute-angulate; antennæ over twice the length of body, proximal joint elongate, cylindrical; eyes not at all prominent, pyriform; apex ventrad. Pronotum with the greatest width contained about one and one-third times in the length; cephalic and caudal margins, subtruncate; lateral lobes arcuate-angulate ventrad, ventral angles rounded. Cerci moderately elongate, slightly tapering, apex acute; subgenial plate rectangulate emarginate caudad, styles flanking the emargination and of fair length. Cephalic and median limbs similar in size and spine development. Caudal femora very robust, the proximal three-fourths inflated, margins unarmed, external face with a regular pattern of oblique arcuate dorso-caudad impressed lines; caudal tibiæ nearly straight; principal internal caudal spur reaching to the apex of the third tarsal joint, claws without arolia.

General color deep tawny ochraceous, ventrad becoming buffy and dorsad becoming suffused with seal brown; a medio-longitudinal line on the abdomen is deep ochraceous rufous; pronotum with the seal brown narrowed and much of the dorsum deep ochraceous, a narrow median line and large lateral patches of this color being present; eyes, black; antennæ ochraceous; fastigium and dorsum of head of the dorsal color; face dirty clay color with the ocelli clear buff.

MEASUREMENTS.

Length of body	19.5 mm.
Length of pronotum	7.2 mm.
Greatest width of pronotum	6.2 mm
Length of caudal femur	18. mm.

The type is the only specimen of the species seen by us.

GRYLLIDAE.

Rhipipteryx brullei Serville.

Puerto Bertoni.—Two females. (Schrottky, No. 4).

Eneoptera surinamensis (DeGeer).

Puerto Bertoni.—October 5, 1909. One female. (Bertoni, No. 406).

ABUNDANCE OF COSTA RICAN BUTTERFLIES.—Mr. William Schaus reports that he took 150 species of *Thecla* in Costa Rica (64 are mentioned in the *Biologia* as from that country) and over 300 species of Hesperidæ.

Lycaena enoptes, battoides and glaucon (Lepid.).

By Henry Skinner, M.D., Philadelphia, Pa.

This is a comparative study from the specimens at hand, no types having been seen and the descriptions being relied on. These three names represent the great difficulties encountered in a study of our butterflies, especially species of some of the earlier authors. The name species represented quite a different idea from what it does to-day, and slight differences in appearance were often taken to represent distinct entities in nature. I could never with any degree of satisfaction find butterflies that would adequately fit these three names as distinct species. The type of *battoides* Behr, I assume, was destroyed in the San Francisco fire. The type of *enoptes* Boisduval may, or may not, be in the Oberthur collection in Rennes, France, and the type of *glaucon* Edwards is doubtless in Dr. W. J. Holland's collection in Pittsburg, Pennsylvania.

After a careful study of the original descriptions, in conjunction with a fair amount of material, I have come to the conclusion that the three names represent but one species. *Battoides* I take to be a variety of *enoptes,* and *glaucon* also a slight variety. I have studied sixty-five specimens from the following localities:

California material has been received from Havilah, June 11 (F. Grinnell, Jr.), also June 19, Pasadena; June 7 and 13 (Louis Wanka); Soldiers' Home (Max Albright); Brodie, July 3 (H. F. Wickham); Truckee, Sierra Nevada; Los Angeles, June 7; Eldorado County, June 19 (6800 ft.). There are also specimens with only a State label.

Las Vegas, Nevada, May 1 and June 5 (Thomas Spalding).

Fort Klamath, Oregon, June 12 to 26 (B. L. Cunningham).

Chimney Gulch, Colorado, June 18 and 20 (E. J. Oslar). These are the only Colorado specimens with accurate data, the others bearing a label "Colorado, Bruce."

Park City, Utah, July 1 and 3 (A. J. Snyder); City Creek Canyon, Salt Lake City, Utah, July 5 (Henry Skinner); Stockton, Utah, June 10 to 26 (Thomas Spalding), also July 3; Provo, Utah, July 28, 30 (Thomas Spalding).

I have compared them according to the following original descriptions:

Enoptes.	Battoides.	Glaucon.
Primaries above. Violet blue, with a rather wide black border; the fringe intersected with white and black.	Primaries above. Wings of male of this species above blue, broadly margined with black, fringes checkered.	Primaries above. Male expands 0 95 inch. Pruinose blue, color of *comyntas;* blackish border to hind margin of equal width throughout and even edged within; fringes short, white, cut with black at ends of nervures.
Primaries below. Ashy white, with a great number of black ocellate points.	Primaries below. Whitish, with two basal dots in a transverse black band hardly bent backward and confluent with the discoidal line, a series of ordinary quadrangular black dots, a double submarginal series and no black margin.	Primaries below. Grey-brown, a marginal series of brown spots or imperfect lunules, preceded by a submarginal series of larger, distinct, blackish spots, the two next inner angle suffused with fulvous; a median row of large blackish spots, the uppermost ones much advanced on costa; a subreniform spot on arc and a smaller spot in cell, both blackish.
Secondaries above. Violet blue, with a rather wide black border.	Secondaries above. Blue, broadly margined with black, fringes checkered; provided with several yellow submarginal lunules.	Secondaries above. Pruinose blue, color of *comyntas;* rather wider border (than in primaries), lunate within and less distinctly defined, the two lunations before anal angle surmounted with fulvous.
Secondaries below. Ashy white, with a	Secondaries below. Three basal black	Secondaries below. A distinct marginal

great number of black ocellate points; the two striae of posterior points are separated on the secondaries by a series of five yellow lunules.	dots and a fulvous band which reaches to an internal series of submarginal dots, but not to the external series of dots nor to the anterior apex.	row of round brown spots, preceded by a second similar row, but which are partly lost in a bright orange stripe that occupies the space between the two rows from anal angle nearly across wing; median row similar to that of primaries; a bent bar on arc; two rounded blackish spots a little posterior to this bar and between it and costa; a third spot on costa nearer the base and a fourth below cell.
"It is found in May on dry hills" (California).	"Head-waters of San Joaquin Valley, California, eleven thousand feet."	"Allied to *battoides* Behr. From two males and one female taken by Mr. Henry Edwards in Nevada."

The larger number of specimens examined are males and the above descriptions refer to males only, the females not presenting any discoverable differences except in size. The males differ in expanse from 14 mm. to 25 mm., the smallest specimens being from Pasadena, Los Angeles and Havilah, California, and from Las Vegas, Nevada. The largest came from Provo, Utah. The specimens taken in July are all large and are the only ones having fulvous on the underside of the primaries. These are evidently a second brood, the first appearing in May.

Enoptes may be taken as the species, having been described previous to the other two. The black border varies considerably in width, being from 1 mm. to 2 mm. One specimen from Fort Klamath, Oregon, has the border 3 mm. in width. The amount of orange on the underside of secondaries varies considerably and in some specimens it is entirely absent. Variety *battoides* has sub-marginal fulvous spots on the secondaries

above. In the series from Fort Klamath, Oregon, some show this character and some do not. I restrict the name *battoides* to the specimens having this fulvous. This form is well figured in Dr. W. J. Holland's *Butterfly Book,* Plate 32, fig. 11. *Glaucon* I have restricted to the variety having two sub-marginal fulvous spots near anal angle of upperside of secondaries and having on the underside of the primaries the two spots next inner angle suffused with fulvous. Having fulvous markings on the underside of the primaries is an unusual condition judging from the material at hand.

It will be noted that the types of *glaucon* came from Nevada, whereas Mr. Edwards in his Catalogue of 1884 credits it to Colorado only. The Utah specimens are somewhat lighter in color than those from California, Nevada or Oregon, and there is more of a tendency for the marginal border of the secondaries above to break into spots. Some specimens from Havilah, California, and Las Vegas, Nevada, have a more brilliant luster (Morpho-like) and are quite small.

I would like very much to have additional specimens of any of these forms from any locality and I will also be pleased to name specimens. The student can make his own deductions from the original descriptions presented; my own studies and conclusions are here given for what they may be worth.

INTENSIV AGRICULTURE.—The letter-heds used by the Iowa State College of Agriculture and Mechanic Arts, Department of Zoology, including the Offis of the State Entomologist, bear the legend "Spelling authorized by the Simplified Spelling Board used in this offis." Strange to relate, the agricultural and mechanic arts, the cultivation of agricultural zoology, and the regulation of the insects of the State, go on just the same—indeed a little better. Because scientific simplification applied to one department of life is sure to promote simplification in other departments of life. Spelling in accordance with reason will thus lead to the reduction of insect pests, and therefore increase the crops. If you do not believe this, state the opposit case, and tell us whether you believe that. Agriculturists have always tended toward simplicity of spelling, and here is a financial reason to confirm their views.—*Simplified Spelling Bulletin,* March, 1911.

A new Sawfly of Economic Importance* (Hymen.).

By S. A. Rohwer, Washington, D. C.

Some time age Mr. R. A. Cushman, who was at that time stationed at Tallulah, Louisiana, sent to the Bureau of Entomology a sawfly which was found defoliating the peaches in that locality. The specimens sent represent a new species belonging to the genus *Caliroa* (sub-genus *Eriocampoides*), and are herewith described. The habits of this species have been studied by Mr. Cushman, and will be described in a paper to be published by the Bureau of Entomology. Mr. Cushman states that they differ in a number of ways from those of the common pear slug, although the larvæ and work are superficially similar.

The accompanying figures were prepared from camera lucida sketches, and the description was made with the aid of a Carl Zeiss binocular with a magnification of thirty-five diameters.

Caliroa (Eriocampoides) amygdalina new species.

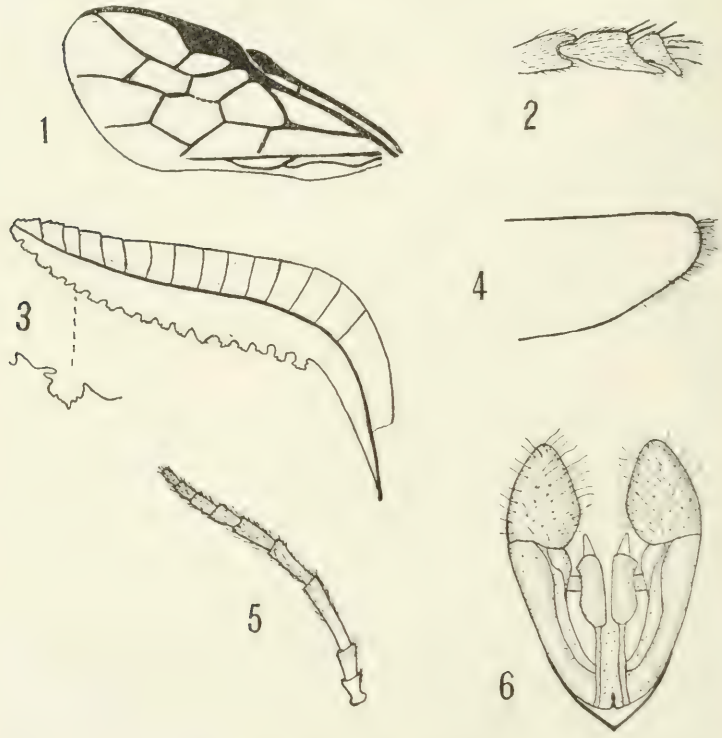
Related to *C.* (*Eriocampoides*) *quercus-coccinea* (Dyar), but the frontal foveæ are small, well defined, punctiform, not large and poorly defined; the third and fourth posterior tarsal joints have projections beneath; the stigma is shorter; the wings uniformly dark; the transverse radius is received basad of the middle of the cell, not beyond the middle; and the saw has small, separate dorsal teeth, and larger ventral ones.

Female.—Length 3.5 mm. Labrum broadly rounded, granular; clypeus broadly emarginate, somewhat angular, the lobes broad, triangular; supraclypeal area convex throughout its entire length, not mound-like; antennal foveæ rather small; middle fovea not sharply defined, large, somewhat circular in outline; frontal foveæ† small, sharply defined, punctiform; sides of the pentagonal area ridged as in *quercus-coccinea;* ocellar basin shallow, circular in outline; postocellar furrow wanting; postocellar area twice as wide as its cephalo-caudad length; antennæ hairy, the third joint much longer than the fourth, but shorter than the fourth

* Contributions from the Division of Forest Insects, Bureau of Entomology, Department of Agriculture.

† The term "frontal foveæ" is used for the foveæ which occur in some species, in the antennal furrows near the frontal crest.

and fifth combined; stigma robust, about three times as long as the greatest width, widest where the transverse radius leaves it, oblique from the transverse radius; the third cubital cell but little broader apically, receiving the transverse radius distinctly basad of the middle; hind wings without closed discal cells; the third and fourth joints of the posterior tarsi with long apical projections beneath; sheath rather narrow, straight above, broadly rounded below, the apex with a tuft



Caliroa (*Eriocampoides*) *amygdalina*.—Fig. 1, anterior wing of female; 2, third and fourth joints of the hind tarsi of female; 3, saw; 4, apex of the sheath; 5, antenna of female; 6, dorsal aspect of the genital armature of male.

of white hair; saw slender, dorsally with small teeth apically, ventrally the teeth are large and are themselves dentate (see Figure 3). Black; the four anterior tibiæ and tarsi, the basal half of the posterior tibiæ and the post-basitarsus white, or whitish; wings uniformly blackish, venation dark brown.

Male.—Length 3 mm. Very like the female, but the middle fovea is

rather smaller and more sharply defined, and the sides of the pentagonal area are not as sharply defined. The hypopygidium is rather short, and is broadly rounded apically; the genital stipes are large and broadly rounded apically, greatly exceeding the hypopygidium. The posterior tibiæ, beyond the middle, and the posterior tarsi are black or strongly infuscated.

Type-locality.—Tallulah, Louisiana. Many specimens reared by Mr. R. A. Cushman from larvae on peach. Some of them under the Bureau of Entomology number "Hunter 1936."

Type.—Cat. No. 13,371, United States National Museum.

Concerning Archylus tener Druce (Lepid.).

By Wm. Barnes, M.D. and J. McDunnough, Ph.D.,
Decatur, Ill.

In the Proc. Ent. Soc., Wash., Vol. VI, p. 65, Dr. Dyar records this species from southern Arizona, expressing at the same time some doubt as to the correct generic position of this insect. In the Proc. Ent. Soc., Wash., Vol. XII, 1910, he places the species in the genus *Norape,* stating (p. 167) that "the single type specimen has veins 3 and 4 of hind wing connate, 4 and 5 of fore wing separate, *although very shortly so.* It therefore must be placed in this genus. The Arizona form, supposed to be the same as the Mexican *tener* is referred to here under the genus *Ramaca.*" On page 173 of the same journal he creates the genus *Ramaca* with *pascora* Schaus as type species, merely stating that this genus differs from *Mesoscia* Hbn. "in having veins 4 and 5 of fore wing and 3-4 of hind wing connate." He then describes as a new species *R. achriogelos* from a single male specimen from southern Arizona, remarking, "Very like *Norape tener* Druce, but differing in venation." If, as must be inferred from Dr. Dyar's remarks, the only point of difference between *tener* and *achriogelos* is in the venation, we fear that our worthy friend, from lack of material probably, has created a synonym.

We have examined a series of 37 specimens from Cochise

Co., Arizona, in the Collection Barnes, and have found a single specimen among them in which veins 4 and 5 of the fore wing are distinctly separate, *although very shortly so* just as Dr. Dyar states is the case with the type of *tener.* The remaining specimens fall in about equal numbers into two groups, having veins 4-5 either stalked or from a point. In one case there was an extra vein between veins 3 and 4. The specimen with veins separate differs in no respect from the others, and all agree exactly both with the description and the figure given in the Biol. Cent. Amer. Dr. Dyar's description of *achriogelos* would also apply equally well to *tener.*

With regard to the hind wings of the specimens before us, most of them have veins 3-4 from a point (connate.) Several specimens however show these veins very distinctly *but shortly* separate. As the genera *Mesoscia* and *Ramaca* are separated by Dyar on the strength of veins 3-4 of hind wings being separate or connate, it is rather doubtful whether *Ramaca* Dyar will hold. As however we have no South American material before us, we leave this point to be decided by more competent authorities than ourselves.

To return to *tener,* we consider then that *achriogelos* Dyar is an absolute synonym, the slight difference in venation in the type of *tener* being due to mere accidental variation. As to the genus into which this species should be placed we are rather at a loss to decide. Dr. Dyar has removed it from *Archylus* and placed it in *Norape;* it cannot remain there, however, as veins 4 and 5 of fore wing are more often connate or stalked than separate; it is shut out from *Ramaca* owing to the fact that veins 3-4 of hing wings are sometimes separate, which would place it in the genus *Mesoscia.* It seems to vacillate between these two last named genera and has become an outcast and a wanderer, surely a harsh fate for such a delicate species. Let us hope it will find a firm abiding place without the necessity of creating still another new genus.

Some Remarks on Mastor bellus and M. phylace (Lepid.).

By Wm. Barnes, M.D., and J. McDonnough, Ph.D.,
Decatur, Ill.

In the January number of the Canadian Entomologist for 1911, page 6, Mr. Coolidge, in an article on the genus *Mastor,* arrives at the conclusion that *M. bellus* and *M. phylace* are but the spring and summer broods respectively of one and the same species. He bases his conclusion on the fact that he has taken *bellus* abundantly in the Huachuca Mts. of Cochise Co., Ariz., from the end of May until about the middle of July and that Mr. V. L. Clemence has given him several specimens taken July 18th and 26th in the Chiricahua Mts., Cochise Co., Arizona, which "have the fringes of a pale, dirty, creamish color, answering perfectly to the description of *phylace* Edw." Without stating any reasons he jumps to the conclusion that these second specimens must be the second brood of *bellus,* in other words, that a species taken in one locality in the latter half of July is but a seasonal form of another species taken in an entirely different locality by a different person from the middle of May until the middle of July. Without additional proof such a statement as this is absolutely worthless; in fact, until satisfactory evidence is given that ova deposited by the early females produce imagines corresponding to the other form, seasonal dimorphism cannot be definitely accepted.

In the case in point it is our opinion that we are dealing with two nearly related but clearly distinct species. We have examined carefully series of both species, contained in Collection Barnes, and including specimens which have been compared with the actual types. The *bellus* are all from the mountain districts of southern Arizona and include specimens taken in May and June and others taken July 24-30, showing the species is probably double-brooded, as stated by Coolidge. No difference however between the two broods can be noted.

Our *phylace* are from southern Colorado and New Mexico, several bearing the date June, which would tend to upset the seasonal form theory.

As further evidence for the distinctness of the two species, we would call attention to the great and constant difference in the stigma on the fore wing of the males, a point which has always been considered of excellent specific value, and which is used in Europe with great success in separating the nearly allied species *lineola* and *thaumas*. In *bellus* the stigma is long and narrow, consisting usually of three distinct tufts of black hair, extending in a line from the space between veins Cu1 and Cu2 across the former to the anal vein. In *phylace* the stigma is much shorter and somewhat stouter: it consists of two tufts of hairs and is largely confined to the space between Cu1 and Cu2, extending but for a short distance across Cu1 and never reaching the anal vein.

With regard to *M. anubis* G. & S. and *M. bicolor* Mabille, which Coolidge is also inclined to place as synonyms of *phylace*, we are unacquainted with either of these species, but would advise great care in making synonyms of species merely because the descriptions or figures appear to fit in fairly well with each other. Sufficient confusion has already been caused among our North American Lepidoptera by such procedure, and unless one has had access to the actual types themselves, or to specimens compared with the types by some reliable authority, it would be well to hold before one the motto advocated by the guides in the Alps of Switzerland, "Hurry slowly."

Arrangement of the Species of Dendrocoris Bergr., with the Descriptions of two new Species (Hemip.).

By H. G. Barber, Roselle Park, N. J.

In my paper on the "Hemiptera from Southwestern Texas," published in the "Bulletin of the Museum of the Brooklyn Institute of Arts and Sciences," Vol. I, No. 9, 1906, I described *Dendrocoris schaefferi* and gave a synoptic key for distin-

guishing the known species of the genus. At that time I did not have Dr. Bergroth's paper in which he had described *D. fruticicola,* and I depended for my diagnostic characters upon a specimen labelled as such, received from the National Museum. The recent acquisition of Dr. Bergroth's paper and several specimens of the true *fruticicola* from Florida, kindly presented to me by Mr. Van Duzee, has shown that the species so indicated in my key is distinct, which I here describe as *D. reticulatus.* I collected several specimens of this species in the Huachuca Mountains, Arizona, in 1905, as well as another undescribed species which I have called *D. arizonensis.* This brings the total number of species of the genus *Dendrocoris* up to seven, which may readily be separated by the following synoptic table:

Head incised in front, with lateral lobes not in contact.
  Humeri strongly prominent and very acute **schaefferi barb. Tex.**
Head rounded in front. with lateral lobes more or less in contact.
  Humeri rounded, not at all prominent, barely projecting beyond lateral margins of hemelytra.
    Lateral margins of prothorax somewhat convexly arcuated.
      pini Mont.—S. W. States
  Humeri more or less rounded or obtuse, projecting well beyond costal margins.
    Lateral margins of prothorax concavely arcuated.
      Anterior one half of pronotum infuscated; connexivum without a small black spot at incisures.
        contaminatus Uhl.—S. W. States.
      Anterior half of pronotum concolorous; connexivum with a black spot or band at incisures..... **humeralis** Uhl.—U. S.
    Lateral margins of prothorax nearly straight.
      Veins of membrane reticulated. Lateral margins of prothorax impressed and impunctate ..... **reticulatus** n. sp.—Ariz.
      Veins of membrane normal. Surface of pronotum punctured to the margins, which are not impressed.
        The stigmata, extreme apical angle of abdominal segments above and below and large spot at each incisure of the connexivum, next the costal margin, black.
          fruticicola Bergr.—Fla.
        The stigmata concolorous; extreme apical angle of abdominal segments below and with a band at base and apex of each abdominal segment of the connexivum, black or fuscous..... **arizonensis** n. sp.—Ariz.

Dendrocoris reticulatus new species.

Color pale ochraceous. Form short and broad. Head short and broad, lateral lobes slightly in contact before tylus and leaving the rounded apex slightly incised. Lateral edges lined with black and slightly concave before eyes. Whole surface of head coarsely and evenly punctured with pale castaneous, punctures becoming blackish towards sides. Antennæ except for straminously colored basal segment. pale rufous; second joint slightly longer than basal, third about one-third longer than second, slightly incrassate, fourth and fifth joints subequal in length and somewhat longer than third. Head beneath except anteriorly and laterally coarsely, concolorously punctate. Pronotum and scutellum coarsely punctured with pale castaneous, punctures arranged somewhat in irregular broken transverse rows. Sharply impressed lateral edge of pronotum almost straight, concolorous, impunctate. The median longitudinal ridge very faint. Humeral angles rather prominent, rounded; surface elevated within. Scutellum short and broad, with apex narrowly rounded. Pale castaneous punctures of the corium, more scattered on the disc, leaving some irregular smooth areas between exterior vein and clavus. Membrane suffused with pale fuscous and with the nervures pale and much reticulated. Expanded surface of the connexivum concolorous with the corium, rather sharply and coarsely punctured with pale castaneous, these sometimes more or less blackish next the incisures; apical angle of each segment tipped with black. Beneath paler with prosternum coarsely punctate with pale castaneous, meso- and metasternum except posteriorly with few punctures. Legs pale stramineous, shaded with rufous towards apex of tibiae and tarsi. Disc of venter smooth, laterally with scattered rufous punctures. Rim of spiracles and outer apical angle of segments 2-6 black. Lateral impressed lobes of the genital segment of the male punctured. Length of ♂ 6.5 mm., ♀ 7.5 mm. Humeral width about 5 mm.

Described from five males and three females in my collection taken in the Huachuca Mountains, Arizona, and one ♀ specimen in the collection of the United States National Museum from Oracle, Ariz., which bears the label *Dendrocoris fruticicola* Bergr. In some specimens the punctures on the sides of the head, pronotum, corium and venter are blackish.

Dendrocoris arizonensis new species.

Very closely related to *D. fruticicola* Bergr. It will average a little larger and proportionately broader. Ground color pale stramineous closely punctured with castaneous. Humeri are equally prominent as in *fruticicola* but usually more rounded. The connexivum is pale

fulvous, closely and concolorously punctate except at base and apex of each segment where the surface is smudged with fuscous encircling the smooth pale callosed edges of the incisures; lateral margin of connexivum either side of incisures black. All beneath and legs entirely clear pale stramineous, with lateral edges of abdomen either side of incisures of segments 2-5, tip of 6th and edges of genital segment of ♀, black. Spiracles concolorous. In the female the side pieces or lateral lobes of the genital segment are placed in a line with the long axis of the body and elongate, while in *fruticicola* these pieces are set more obliquely and not so much drawn out to an acuminate apex. Length of ♂ 7.5 mm., ♀ 8.5 mm.

Described from one male and two females collected by me in the Huachuca Mountains, Arizona, July, 1905.

On Some Rare Cicindelae (Coleop.).

By R. P. Dow, New York City.

Among the material received last year from Mr. John Woodgate, Ft. Wingate, New Mexico, were long series of a *Cicindela* labelled by him *vulturina*. All were taken in July and August, and were about equally divided between black and green forms. The former agree perfectly with the description of *santaclarae* Bates. The earlier insects are generally green. A month later the black predominates. Both forms are the same insect, beyond a doubt, but examination of elytra under a strong lens with transmitted light shows that the amount of pigment in the black form is easily twice that of the green, and the color of the former mainly due to broken light rays, rather than pigment. The black color is piceous. In over 300 specimens there are no intermediates. I therefore suggest the varietal name *anita* for the black form. It is not ill known already to collectors.

In the same material I found two specimens which are beyond a doubt *sperata*. I have a good share of the color forms recognized in the E. D. Harris catalogue. The amount of pigment in all these forms is about equal and the color due almost entirely to broken light rays. My two specimens are light emerald green. All others of the species that I have seen

range through the gray, red and brown tones. I understand that Dr. Henry Skinner first noticed this emerald form and wrote to some specialists suggesting that it ought to be named. Both Mr. C. W. Leng and Mr. E. D. Harris concurred in that opinion, but both were generous enough to suggest that I name it. Hence the proposed varietal name *marutha*. Anyone who understands the spectrum can hardly expect an intermediate between two colors so far removed.

A year ago last June I caught a few Cicindelas in my hand, (having left net at home), at DeBruce, Sullivan County, New York. Three specimens were distinctly olivaceous. They were, however, *ancocisconensis,* as all agree in New York. I gave one such to Mr. Leng and Mr. Harris and retain the third. Next year I went back in June. Mr. Harris and Mr. W. T. Davis went in June and August, the last week in each. We took large series of *ancocisconensis*, but all typical in color.

They are extremely local, found only on the roadway along the Mongaup river for the first three miles from DeBruce village. It is to be hoped that some collector will make a catch this year. Anyone interested will receive full information about locality if he will enclose postage for reply. *Repanda* and *tranquebarica* fly with them.

Sexguttata is common in the fall months on the Mongaup road. In June the form on the Willowemock road is entirely *harrisii.* So far as I can observe these two forms do not meet. I took one *harrisii* (which I gave to Mr. Leng), with head and thorax colored like *purpurea.* They fly together and I have seen male *purpurea* and female *harrisii* with unmistakable understanding between them. *Punctulata* is common over the same road, but from midsummer only. I have never seen *sexguttata* on this road. The evidence so far tends to substantiate Mr. Leng's claim for *harrisii* rather than Dr. W. Horn's curt dismissal. It is worthy of speculation whether *harrisii* did not originate from natural hybrids of *purpurea* blood.

The entire collections of British and exotic Hymenoptera, the Palaearctic Hemiptera and the microscopical preparations of the late Edward Saunders, F. R. S., are now in the Natural History Museum at South Kensington, London, S. W.

Some new Beetles from North Carolina, with Ecological Notes (Coleop.).

By Charles Dury, Cincinnati, Ohio.

From June 16 to July 6, 1910, I collected insects in the Plott Balsum Mts., N. C. Every day of that time it rained. Sometimes it poured for hours at a stretch, frequently all night, though generally there were a few hours each day when the sun was shining. But few diurnal Lepidoptera were seen, and they the most common species. Diptera and Hymenoptera were also very scarce. Coleoptera were more abundant, though mostly of common well known species. The rainfall at this season in these mountains is tremendous. The superintendent of the fibre mills at Canton told me that it rained one summer 90 consecutive days since he had been there, at least a shower each day. A few new species of Coleoptera were secured, three of which are here described. In addition, I enumerate some of the more interesting and desirable species taken.

Cychri were not abundant. They were *canadensis, bicarinatus, andrewsii* and *guyotii.* About a dozen species of *Pterostichus* were identified among which were *P. spoliatus, blanchardi,* and *palmi. P. adoxus* was very abundant as was *Platynus angustatus,* which merged into the one described as *gracilentus* by intergrading forms. Three times I climbed to the top of "Jones' Knob" (over 6,000 feet), each time to be driven back by a deluge of rain. From the trunk of a felled balsam tree some huge blue *Anthophilax* had recently emerged; I found dead and broken ones but none living. A few *Emmesa connectens* Newm. were taken from under bark. Beating the large flowers of *Rhododendron catawbiense* brought down showers of beetles mostly Longicorns of five or six small species.

Coiled under the bark of a fallen tree, I counted 14 beautiful little snakes of three species. The male snowbirds (*Junco*) were singing and several nests were found, all located on the ground. One of July 1, had four fresh eggs in it. The concealment of this nest was so ingenious and perfect, it never could have been found had I not noted the bird fly out of it. It was on

a sloping bank with a lace-like screen of ferns hanging down to hide the entrance.

The growth of fungus was prolific, and some of the plants huge in size. *Oxyporus* and other Staphylinidae were plenty in these fungi. From one small *Agaricus,* about 2 inches in diameter, 24 *Oxyporus 5-maculatus* were taken. Under bark a few *Hypoteles capito* Lec. were found, in company with *Rhizophagus minutus,* and other flat species modified for an existence in the narrow crevices of close-lying bark. Beneath a flat stone in a nest of *Termes* were a number of *Trichopsenius,* curious little Staphylinids that are only found associated with *Termes.* When I had picked up three of the active little beetles, the rain came down in torrents. I replaced the stone over the nest, but next day when I went back hoping to get more, the *Termes* had departed, and their guests had gone with them. Of Pselaphidæ, *Adranes coecus* was found in a nest of black ants under a slab. *Euplectus crinitus* and a large *Batrisodes,* perhaps a new species, together with *B. globosus* and *virginiae* occurred under bark. *Centrodera decolorata* was beaten from foliage and came down amid a shower of water. Flying about among the wet weeds on the mountain sides were many scorpion flies, of the genus *Panorpa, P. signifer* and *P. maculosa* especially abundant.

At night many moths and beetles came to light and some fine ones were captured. In this work I was ably assisted by a setter dog belonging to the manager of the Lodge. The intelligence of this dog was a marvel. After chewing up several specimens, his master told him not to bite them. He evidently understood for after that he knocked the beetles down with his paw and held them until we bottled them. The only *Acanthocinus nodosus* taken, was caught in this way by the dog. This dog seemed to understand what we were doing better than the mountaineers, one of whom said to the manager of the Lodge, "What was the matter up to your house last night? I seen a feller jumping around on your porch waving a white flag." He had evidently mistaken our butterfly net for a flag of truce. Four species of *Lachnosterna* came to light, the most common of which was *L. corrosa* Lec.

Less than 250 species of Coleoptera, and most of them common, were identified on the trip. Rather a disappointment considering the hard work done. Among the unidentified species the following seem to be new:

Pinacodera virescens n. sp.

Head and thorax piceous black, shining. The thorax with wide pale border, wider behind. Hind angle obtuse, margin punctured and transversely wrinkled. Elytra dull opaque green, strongly alutaceous. Legs and antennae pale. Length 9 mm.; width 4.50 mm.

One male.—Plott Balsam Mts., North Carolina, June, 1910. As compared with the other North American species, this is a shorter and broader insect.

Scaphisoma (Scaphiomicrus) carolinae n. sp.

Black, shining. Punctures of prothorax very minute, those of elytra slightly coarser. Each elytron with a sharply defined rufous spot near base, rounded in front and extending obliquely back to apex, leaving a triangular black area on dorsum of elytra, which area extends three-fourths way to elytral apex. Sutural striae flexed outward at base in male, straight in female. Beneath strongly punctured, except the last four ventral segments. Postcoxal plates not reaching one-half the length of basal segment. Parabolic in form behind. Three specimens, 1—9 mm.

Balsam, North Carolina, June, 1910. In fungus. This species recalls Mr. Fall's *S. ornata* from Alabama, but is larger, much broader, elytral maculation different and punctures finer.

Athous lengi n. sp.

Color ochre-yellow with an oblong piceous cloud in middle of thorax, extending from base to apex, and another along elytral suture from scutellum to apex. Thorax closely and strongly punctate, elytra and body beneath more finely so. Antennal joints of male more serrate than in female. Second joint short, third to eleventh subequal in length. Front coxae covered with dense fine pale buff-colored pubescence. Male 13 mm., and female 16 mm. long.

One from Balsam, North Carolina, and one from Clayton, Georgia. One also taken at Clayton by Dr. Lore of New York, June. A large stout species that recalls in facies the female of *Corymbites longicornis* from North Carolina, and *Athous vittiger* from the State of Washington, though very different structurally. Named in honor of Chas. W. Leng, of New York.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

TO CONTRIBUTORS.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, four weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form and without covers, will be given free, when they are wanted; if more than twenty-five copies are desired, this should be stated on the MS. The receipt of all papers will be acknowledged. Proof will be sent to authors for correction only when specially requested.—Ed.

PHILADELPHIA, PA., JUNE, 1911.

It will probably be of interest to the younger entomologists to know something of Major John Eatton LeConte, whose picture appears on the covers of this year's issues of the NEWS, and will be placed on the title-page of the completed volume. "He was born in Shrewsbury, New Jersey, in 1784 and died in 1860, having lived most of his life in New York. Entering the corps of topographical engineers of the United States Army with the rank of captain, at the age of thirty-four, he remained in the government service until 1831, attaining the rank of brevet-major in 1828, for ten years' faithful service. His tastes were many sided, but his special studies, those which were the passion of his life, were in natural history. Before he entered the engineer corps he published a catalogue of the plants of New York City in the journal edited by Dr. Hosack, under whom his brother had studied medicine, and in subsequent years, during his connection with the army and afterwards, he published special studies on *Urtricularia, Gratiola, Puellia, Tillandsia, Viola* and *Pancratium*, as well as on our native grape-vines, tobacco and pecan-nut. He published also a variety of papers on mammals, reptiles, batrachians and crustacea, mostly of a systematic character, and collected a vast amount of material for the natural history of our insects, as may be seen by a single installment that was published in

Paris in conjunction with Boisduval upon North American butterflies (Histoire Generale et Iconographie des Lepidopteres et des Chenilles de l'Amerique Septentrionale). Coleoptera, however, may be said to have been his specialty, particularly in the latter part of his career, though he published only four papers on them, and mainly upon a single family, the Histeridae. He not only amassed a considerable collection, but left behind a most extensive series of water-color illustrations of our native insects and plants made with his own hands." *

He was the father of Dr. John Lawrence LeConte, the distinguished Coleopterist, who died in 1883.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

An oil portrait of Dr. John Lawrence LeConte, the distinguished American Coleopterist, was presented to the Academy of Natural Sciences of Philadelphia, on Tuesday, April 18, 1911, by Mrs. LeConte. Dr. Henry Skinner made the presentation on her behalf.

A State Biological Survey has been organized at the University of Colorado, the work being in the hands of a committee consisting of Professors F. Ramaley, T. D. A. Cockerell and J. Henderson. The work of such a survey has been carried on for a number of years past, but until now there has been no definite organization. The work includes fossil as well as living species of plants and animals.—*Science.*

Taxonomic Value of the Genital Armature in the Tse-tse flies (*Glossina*).—Mr. Robert Newstead gave an address on this topic to the Lancashire and Cheshire Entomological Society, December 19, 1910, an abstract of which occupies nearly a page each in the *Entomologist* and the *Entomologists' Monthly Magazine* for March, 1911. He finds the male armature to be "the true and almost only natural anatomic elements that can at present be found in these insects." On this basis the eleven species now known fall into three very striking and distinct groups.

*S. H. Scudder, Trans. Amer. Ent. Soc., Vol. XI. (Appendix). The superb collection of Major LeConte's drawings of insects are now the property of the Missouri Botanical Garden, and it is a great pity they have never been published, as they could be splendidly reproduced by the half-tone process.—H. S.

WHAT IS THE GENOTYPE OF X-US JONES, 1900, BASED UPON A SPECIES ERRONEOUSLY DETERMINED AS ALBUS SMITH, 1890?—*Statement of Case.* —Jones proposes the new genus *X-us,* 1900, type species *albus* Smith, 1890. It later develops that *albus* Smith, 1890, as determined by Jones, 1900, is an erroneous determination. What is the genotype of *X-us,* 1900; *albus* Smith, 1890, or the form erroneously identified by Jones as *albus* in 1900?

Discussion.—The nomenclatorial problem expressed in the caption of this note is solved in two diametrically opposite ways by different authors. Some writers maintain that the original *albus* Smith, 1890, is the genotype, while others maintain that the genotype is represented by the species actually studied by Jones and misdetermined as *albus* Smith. Cases of this general nature have given rise to considerable confusion in nomenclature, and several such cases have been referred to the International Commission on Nomenclature for opinion. At the last meeting of the commission, the principles involved came up for discussion, but it was impossible to reach a unanimous agreement. On account of the differences of opinion, the secretary was instructed to make a careful study of a number of cases, and to report upon the same to the commission. It is not difficult to foresee that no matter how the cases are finally decided, great dissatisfaction will arise among zoologists because the opinion rendered is not the direct opposite of what it eventually will be. Recognizing that this is one of the most difficult cases that has ever been submitted to the commission, and recognizing the fact that regardless of our action we shall probably be criticized more on basis of our decision on this case than because of any other opinion that we have rendered, I am desirous of studying at least one hundred cases if possible, that would come under such ruling, before my report is formulated. In view of the foregoing premises, I respectfully request zoologists in different groups to call my attention to as many instances of this kind as possible, with which they are acquainted in their different specialties. Further, since the arguments on both sides of the problem appear to be almost equally valid, it does not seem impossible that the final decision will have to be based upon an arbitrary choice between the two possible rulings and on this account I am desirous of obtaining all possible arguments on both sides as they occur to different zoologists, and also any personal views based upon convenience or inconvenience, or other grounds, which may be held by different colleagues. I will hold the case open at least until September 1, for the presentation of arguments by any persons who may desire to submit their views.—C. W. STILES, *Secretary of the Commission.* Bureau of Animal Industry, U. S. Dept. Agric., Washington, D. C. (Reprinted from *Science*).

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), excluding Arachnida and Myriapoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in Heavy-Faced Type refer to the journals, as numbered in the following list, in which the papers are published, and are all dated the current year unless otherwise noted. This (*) following a record, denotes that the paper in question contains description of a new North American form.

For record of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington.

3—The American Naturalist. **4**—The Canadian Entomologist. **7**—U. S. Department of Agriculture, Bureau of Entomology. **8**—The Entomologist's Monthly Magazine, London. **9**—The Entomologist, London. **11**—Annals and Magazine of Natural History, London. **19**—Horae Societatis Entomologiae Rossicae. **22**—Zoologischer Anzeiger, Leipzig. **35**—Annalen, Societe Entomologique de Belgique. **45**—Deutsche Entomologische Zeitschrift. **46**—Tijdschrift voor Entomologie. **50**—Proceedings, U. S. National Museum. **73**—Archives, Zoologie, Experimentale et Generale, serie 5, Paris. **84**—Entomologische Rundschau. **89**—Zoologische Jahrbucher, Jena. **92**—Zeitschrift fur wissenschaftliche Insektenbiologie. **143**—Ohio Naturalist. **148**—New York Agricultural Experiment Station, Geneva. **163**—American Journal of Science, New Haven, Conn. **179**—Journal of Economic Entomology. **185**—Journal, Quekett Microscopical Club, London. **193**—Entomologische Blatter, Nurnberg. **204**—New York State Museum Bulletin. **216**—Entomologische Zeitschrift, Stuttgart. **220**—New Jersey Agricultural Experiment Station, New Brunswick, N. J. **240**—Maine Agricultural Experiment Station, Orono. **272**—Memorias, Real Academia de Ciencias y Artes de Barcelona. **285**—Nature Study Review, Urbana, Illinois. **305**—Deutsche Entomologische National-Bibliothek, Berlin. **310**—L'Echange, Revue Linneene, Moulins, **326**—Le Progress Agricole et Viticole, Villefranche, France. **327**—Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. (new Ser.), Calcutta. **328**—Anales del Museo Nacional de Montevido. **329**—Zoologica, Stuttgart. **330**—London, Edinburgh and Dublin Philosophical Magazine and Journal of Science, London. **331**—Annual Report, Experimental Farms, Canada Department of Agriculture, Ottawa. **332**—Bulletin of the Southern California Academy of Sciences, Los Angeles.

GENERAL SUBJECT. **Felt, E. P.**—26th report of the state entomologist on injurious and other insects of the state of New York, 1910, **204,** No. 147, 104 pp. **Handlirsch, A.**—New paleozoic insects from the vicinity of Mazon Creek, Illinois, (continuation), **163,** xxxi, 353-377 (*). **Hartzell, F. Z.**—A preliminary report on grape insects, **148,** Bul. No. 331, 489-581. **Hawkins, L. S.**—Studies of aquatic insects, **285** vii, 91-96. **Hewitt, C. G.**—Report of the Entomologist (of Experimental farms of Canada), **331,** 1910, 223-250. **Johannsen, O. A.**—Insect notes for 1910, **240,** Bul. No. 187, 1-10. **Michelson, A. A.**—On metallic coloring in birds and insects, **330,** xxi, 554-567. **Muller, R.**—Die uebertragung von krankheiten durch insekten, (cont.), **216,** xxv, 17-19. **Murtfeldt, M. E.**—Why collect insects? **179,** iv, 229-230. **Sherborn & Durrant**—Note on John Curtis' British Entomology, 1824-39; 1829-40; and 1862, **8,** xxii, 84-85. **Smith, J. B.**—Insects injurious to the peach trees in N. J., **220,** Bul. No. 235. **Sorauer, P.**—Handbuch der pflanzenkrankheiten. Lief. 23, 401-430 pp., Berlin. **Wilson, H. F.**—Some old methods applied in a new manner to a collecting machine, **179,** iv, 286-288. **Zweigelt, F.**—Das sammeln in der natur und seine wissenschaftliche und psychologische bedeutung (cont.) **84,** xxviii, 57-58.

APTERA & NEUROPTERA. **Alderson, E. M.**—Notes on the life-history of Chrysopa flava, **9,** xliv, 126-129. **Hoffmann, R. W.**—Zur kenntnis der entwicklungsgeschichte der Collembolen, **22,** xxxvii, 353-377. **Krauss, H. A.**—Monographie der Embiden, **329,** Heft 60, 78 pp. **Lewis, R. T.**—Note on the larva of Mantispa, **185,** xi, 213-216. **Patch, E. M.**—Insect notes for 1910. Psyllidae, **240,** Bul. No. 187, 10-20 (*). **Schirmer, C.**—Libellen-studien, **84,** xxviii, 49-50.

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List of North American Cicindelidae in the Harris Collection. By Edward Doubleday Harris, Truan Press, Yonkers, New York, 1911.

The advent of the printed pin-locality-label marked a distinct advance in the study of entomology, as many interesting problems will be solved by a study of geographical distribution and seasonal appearance. Mr. Harris has given the student of distribution a useful guide and has made his splendid collection of these beetles of use to the scientific world. There are too many collections that are only a source of pleasure to the owners and contain a large amount of valuable data that may or may not become of use. The genus *Cicindela* is a very interesting one from the standpoint of evolution and illustrates the words of LeConte spoken many years ago: "The prevailing character of tropical faunas is individuality, the production of peculiar forms within limited regions, while the distinguishing feature of temperate and Arctic faunas is the repetition of similar or identical forms through extensive localities." The Coleopterists have been prone to poke fun at the Lepidopterists, alleging lack of anatomical characters in descriptive work, and undue reliance on color. A careful study of specific values in the Cicindelidae will show some surprising things, and I am afraid, in some instances, the best method of determining species is to rely on the locality label. This work by Mr. Harris will be found very useful to the systematist, and the student of distribution and geographical variation.—H. S.

Illustrations of Diurnal Lepidoptera with Descriptions. By Andrew Gray Weeks, Jr. Second volume. University Press, Cambridge, Mass. This work contains twenty-one beautiful and accurate illustrations of new species lithographed in color. The species were taken in the neighborhood of the Suapure River in Venezuela. Mr. Weeks is to be congratulated on this excellent work as it is a valuable contribution to the literature of exotic Rhopalocera. The frontispiece is an engraved portrait of the late distinguished student of the butterflies, Mr. William Henry Edwards. There is given a list of the writings of Mr. Edwards and a list of the species received from Suapure. We hope to see additional volumes by Mr. Weeks. If all new species were illustrated in this way the study would be relieved of many difficulties.

It may be well in this connection to call attention to the joint work "Illustrations of North American Lepidoptera Sphingidae," by J. W. Weidemeyer, S. Calverley and W. H. Edwards, published by the American Entomological Society in 1903.—H. S.

A History of the American Entomological Society, Philadelphia, 1859-1909. Prepared by request of the Society by E. T. Cresson with an introduction by the Rev. Henry C. McCook, D.D., Philadelphia, Pa.—This pamphlet of sixty pages has been issued by the society whose name and seal it bears on the title-page as a result of the meeting held February 15, 1909, in commemoration of its fiftieth anniversary. At that meeting, Mr. E. T. Cresson, sole survivor of the three founders of the Entomological Society of Philadelphia, read a history of the earlier years of its existence and then moved that a Committee be appointed to bring the history up-to-date. This action having been decided on, Rev. Dr. Henry C. McCook, Mr. Benjamin H. Smith and Dr. Henry Skinner were charged with this duty, and the present pamphlet is the result of their labors. Its contents are: an Introduction by Dr. McCook, the history of the Society, 1859-1909 (18 pages), the proceedings of the fiftieth anniversary meeting, statements of the contents of the Society's collections of insects and library, lists of the names and terms of officers, a list of the past and present resident and corresponding members, and a copy of the act of incorporation of the Entomological Society of Philadelphia by the Legislature of Pennsylvania in 1862. (By action of the Court, this charter was on petition amended in 1867, and the Society's name changed to "The American Entomological Society"). The pamphlet is illustrated by three portraits—those of Dr. Thomas B. Wilson, (died March 15, 1865), its early and greatest benefactor; Dr. John L. LeConte (president 1859-60, 1870-83), and Dr. George H. Horn (president 1867-68, 1884-97).

Doings of Societies.

FELDMAN COLLECTING SOCIAL.

Meeting of February 15th, 1911, at 1523 S. 13th St., Philadelphia. Twelve members were present. President Haimbach in the chair.

Prof. Smith read a very interesting article entitled "Entomology—the Old and the New," contrasting the older and younger generations. This led to a general discussion on collectors and the lack of knowledge displayed by the majority of these.

Mr. Daecke recorded the following species of Diptera which did not appear in the latest New Jersey List: *Diachlorus ferrugatus* Fabr., "The Yellow Fly of the Dismal Swamp," collected by himself at Weymouth, VII-30-'04 and Stone Harbor VIII-3-'07.

Mr. Harbeck exhibited five species of Tachinidæ, showing their extremes in size and mentioning their hosts; they were: *Archytas aterrima* Desv., *Winthemia quadripustulata* Fabr., *Senotainia trilineata* V. d W., *Cryptomeigenia thentis* Walker and *Cistogaster immaculata* Macq.

A vote of thanks was extended to Mr. Haimbach for the manner in which he entertained the Social in January.

Adjourned to the annex.

Meeting of March 15th, 1911, at 1523 S. 13th St., Philadelphia. Eight members were present. Vice-President Wenzel in the chair.

Mr. Laurent mentioned the different broods of the Periodical Cicada, and said that they could be easily traced, but it was hard to understand their overlapping. The same speaker also made some remarks regarding the collecting of Lepidoptera while away on a long trip, stating that all specimens of one inch or less expanse should be pinned with the wings hanging downwards, as such specimens were easily relaxed and good mounts could be made. This was particularly the case with the butterflies of the genus *Pamphila*, as where the specimens

had been papered it was almost impossible to make a good and perfect mount. The pin in the field should be two sizes smaller than the one finally used for the collection. This led to a general discussion on the different modes of mounting other orders.

Mr. Wenzel exhibited several boxes of his recently remounted and re-arranged weevils.

Adjourned to the annex.—Geo. M. Greene, *Secretary*.

NEWARK ENTOMOLOGICAL SOCIETY.

The regular meeting that was to be held on February 12, 1911, at the Newark Turn Hall was dispensed with, and instead the following fifteen members Angelman, Brehme, Broadwell, Buenson, Doerfel, Doll, Erhard, Franck, Keller, Lemmer, McCormack, Mayfield, Porter, Schmich and Schleckser, on the invitation of Mr. Kearfott, visited him at his residence in Montclair. Mr. Kearfott invited the "boys" to look at his collection of Micro-lepidoptera which contains about 150,000 specimens, and which without doubt is one of the largest of its kind in the world.

Several hours were spent in looking over the tiny insects, and then Mr. Kearfott invited the visitors to take lunch and refreshments. The members appreciated the hospitality very much and a vote of thanks was tendered to Mr. Kearfott.

Meeting of March 12th, 1911, at the Newark Turn Hall. President Buchholz in the chair; eleven members present. Mr. H. Kircher and H. Schwandke, visitors.

Mr. Herpers presented the Society with a set of the Bulletin of the Brooklyn Entomological Society, Volumes 1-2-3 and 5, and also a copy of Explanation of Terms used in Entomology, published by the Brooklyn Entomological Society in 1883. A series of seventeen year locusts, collected by Mr. Herpers in 1894, were donated to the Society's collection.

Mr. Kircher reported finding a *Ceratomia undulosa* caterpillar feeding on Trumpet Vine.

Meeting of April 9th, 1911, at Newark Turn Hall. President Buchholz in the chair; twelve members present.

On the motion of Mr. Keller to hold a field meeting on May 30th, the President appointed Messrs. Keller, Brehme and Erhard as a committee to select a suitable place for the meeting. The Field Committee selected Springfield, New Jersey, for this meeting.

Mr. Keller reported that he had seen the Starlings (*Sturnus vulgaris*) picking the soft Arctia cocoons from sides of houses.

A general discussion on Forestry and Collecting in the United States and Germany by Messrs. Keller, Kircher and Buchholz was very interesting. The general belief was that more collecting is done by beating trees in Germany than in the United States.—HERMAN H. BREHME, *Secretary*.

OBITUARY

DR. HERMAN WILLEM VAN DER WEELE.

From a memorial notice (in Dutch) contributed to the latest issue (Volume 54, first Aflevering, April 8, 1911) of the *Tijdschrift voor Entomologie* by Dr. Ed. Everts, we learn some particulars of the life of this young Dutch neuropterist. Van der Weele was born October 8, 1879. His education was obtained at the Leyden High School, especially under Prof. A. C. K. Hoffman, and later at the University of Berne, Switzerland, at which latter, under Prof. W. Studer's direction, he produced his dissertation *Morphologie und Entwicklung der Gonapophysen der Odonaten* and obtained his doctor's degree. He became second conservator of insects at the Leyden Museum of Natural History, and went thence to the Dutch East Indies where he succumbed to cholera in Batavia, Java, August 29, 1910. His bibliography comprises twenty-seven titles of papers in English, French and German, the most extensive among them being two fascicules, on Ascalaphides, Sialides and Rhaphidides, of the *Catalogue Systematique et descriptif*

des collection zoologiques du Baron Edm. de Selys Longchamps. The memorial notice is accompanied by a portrait of van der Weele.

Dr. Edouard Piaget.

The same number of the *Tijdschrift* contains also a biographical notice (in Dutch) of Dr. E. Piaget, with two portraits at different periods of his life, by Dr. H. J. Veth. Dr. Piaget was born November 3, 1817, at Les Bayards, canton of Neuchatel, Switzerland. He went to Holland about the age of eighteen, and studied law at the University of Leyden, intending to return to Switzerland as an advocate. He remained in Holland, however, until 1882, much of the time as lector in the Erasmian Gymnasium and in the Higher Burgerschool, at Rotterdam. Returning to his native land, he remained there until his death in the hospital at Couvet, September 10, 1910. He was interested in Botany and Entomology, in the latter being chiefly known for his work on the Pediculina, his principal memoir being *Les Pediculines, Essai Monographique* (Leide. E. J. Brill, 1880, pp. xxxix, 714, and atlas of 54 plates) with a *Supplement* thereto in 1885 (pp. xii, 162, 17 plates). His entomological papers date from 1869 to 1895. His entomological collection, herbarium and library were presented to the city of Neuchatel in 1905. He was also the author of a history of the Jesuit order.

Dr. Samuel Hubbard Scudder.

The daily newspapers announce the death of this veteran entomologist and paleontologist at his home in Cambridge, Massachusetts, on May 17, 1911. We hope to publish a notice of his life and work in the next number of the News.

Erratum.

Lines 14 to 17, page 227, of Entomological News for May, 1911, should be transferred to the note on "Platypsylla castoris Rits. in California" at the top of the same page.

EXCHANGES.

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☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Wanted—Elateridae and Buprestidae for other named Coleoptera. I also desire to exchange entomological bulletins of the various Experiment Stations for others not in my library, and for bulletins on plant pathology. Send lists.—C. O. Houghton, Delaware College, Newark, Delaware.

Lepidoptera on pins from this locality for exchange.—Ernst Frensch, Box 622, Stonington, Conn.

Wanted to purchase, or obtain by exchange, living pupae of *Papilio turnus* from the South and West.—John H. Gerould, Hanover, N. H.

Will sell for cash a complete set of Illinois Geological Reports, or will exchange for technical entomological writings; those dealing with parasitic insects preferred.—J. E. Hallinen, Interlaken School, Laporte, Indiana.

For Sale or Exchange—Living pupae of *A. luna* and *A. ajax;* also adults of *Anthocharis pima* and *sara*, both perfect and second.—N. Weil, Calhoun, McLean Co., Kentucky.

Wanted For Cash—Can. Ent., Vol. xxx, xxxi; Riley's First Missouri Report and other papers on North American entomology not in my library. Send lists.—W. Beutenmuller, Am. Mus. Nat. Hist., New York, N. Y.

Wanted—Bibliography of Economic Entomology, Part 6; Div. of Entomology, New Series, Bull. No. 15; Technical Bulletin 1; Old Series, Bulls. 1, 2, 4, 5, 8, 9, 10, 11, 12, 13, 18, 20, 26, 28, 30 and 33. Will pay cash or exchange.—Charles W. Hooker, Bureau of Ent., Washington, D. C.

Wanted—Correspondence with collectors of Lepidoptera desiring to take a trip of from 1 to 2 years in Malay Archipelago, or following the course of Amazon River in Brazil.—A. F. Porter, Decorah, Iowa.

Wanted—Living eggs of tent caterpillars (*Malacosoma* spp.) from the western United States. Kindly indicate food plant. Exchange or cash.—C. R. Crosby, 43 East Ave., Ithaca, N. Y.

Wanted No. American Buprestidae and Cicindelae. Will name and return Coleoptera in certain families for specimens of the above. Duplicates for exchange.—C. A. Frost, 40 Grant St., So. Framingham, Mass.

For Exchange—Eggs of *Hemileuca maia*, Cicindela and Lepidoptera in paper packages. Desire exotic or native butterflies and beetles.—A. Mares, 2517 So. Homan Ave., Chicago, Ill.

Pupae of *P. modesta, Sm. excaecatus. S. eremitus, P. troilus, cresphontes*, cocoons of *luna, promethea, polyphemus, cecropia, chrysalids of Catocala illecta* in May and other species later. Butterflies and moths in papers and on pins.—R. R. Rowley, Louisiana, Mo.

Wanted for cash or good exchange, live fertilized females or fertile ova of *Versicolor, Pandorus, Achemon* and *Bicolor*; can supply fertile ova of hybrid *Actias selene, luna, Antherea mylitta* and others.—James L. Mitchell, 212 Indiana Trust Building, Indianapolis, Indiana.

Wanted addresses of reliable collectors or dealers in Florida, Texas, New Mexico and California for the exchange or purchase of Lepidoptera.—Carlo Zeimet, 170 William St., New York.

Butterflies—I will name **spread** North American butterflies. Many rare species for exchange.—Dr. Henry Skinner, Logan Square, Philadelphia, Penna.

Lepidoptera in papers from this locality for exchange.—H. L. Geiger, R. D. No. 1, Miami, Fla.

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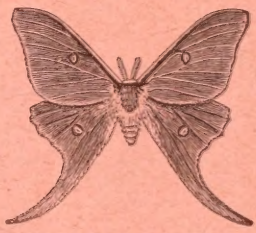

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